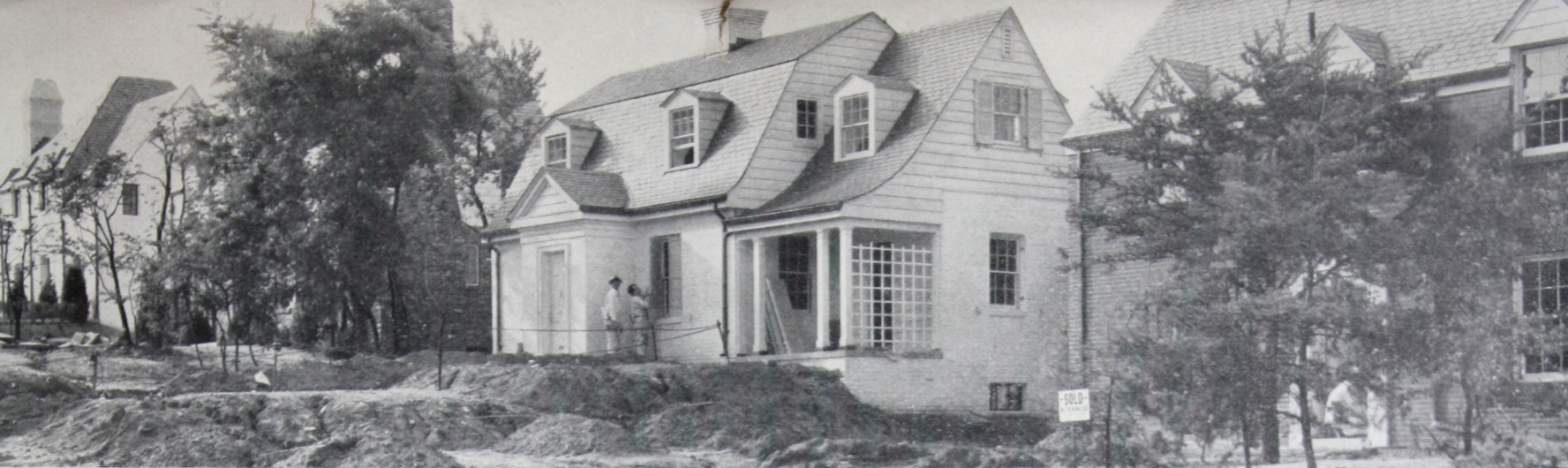


Stran-Steel Framing
in 17 Homes Built by
W. C. & A. N. Miller
Washington, D. C.

REPRINTED FROM OCT., 1934
"AMERICAN BUILDER"



D. C. Builders Feature Steel Framing

Miller Brothers, of Washington, first to offer homes of brick and stone with floors and bearing partitions of Stran-Steel — Find buyers recognize advantages; "17 houses now under construction and orders for 9 more placed"



Behind the Plaster

—you will find the reason for the continued prestige of Miller-Built Homes. Solid masonry walls, water-proofed and insulated. Stran-Steel construction and concrete floors. In a word—the finest materials skillfully assembled.

You are invited to inspect the homes now being built on the 4900 block of Quebec Street. There you can see the materials and methods which create a Miller-Built Home.

Gas Conveniences by the Washington Gas Light Company

W. C. & A. N. MILLER
1119 17th St.
DI. 4464

WHILE Mr. Moffett and other officials of the Housing Administration at Washington are wrestling with the problems of home financing and how to get building started, a firm of Washington home builders is going right ahead building good homes and selling them to the steady stream of immigrants to the Nation's Capital. W. C. and A. N. Miller, brothers, for twenty years readers of American Builder, developers of Wesley Heights, Spring Valley and Westerleigh (Washington), are the builders referred to. They have an enviable reputation for planning and building good homes and for successfully developing the most beautiful residential sections of Washington. Their "conversion" early last spring to a radically new idea in house construction and their experience with it are worth recording.

To Mr. Frank Main, structural engineer of the Stran-Steel Corporation, Detroit, goes the credit for convincing the Millers that the nailable steel studs and joists used so effectively in the "Good Housekeeping" house at the Century of Progress would make a practical contribution to Miller quality if used for all bearing partitions and first and second floor framing in connection with the Miller standard masonry walls.

The attitude of the Miller organization up to that time, like that of the other Washington builders, was related by Mr. W. C. Miller in an interview that appeared in the "Washington Evening Star" of Aug. 16.

"Competitive efforts at fashioning the home of tomorrow from the talents and materials of today," he said, "thus far had served mainly to give Washington operative builders headaches—and by holding prices to higher levels, to dismay would-be purchasers of moderate means. The faith of the public in its response to new ideas in home construction, however, now promises to gain its long-merited reward. A new era in home construction appears at hand.

"There is indicated neither revolutionary change in design nor sensational slash in cost. The home of tomorrow will not be the freakish two-decked, glass enclosed, pre-fabricated

Dignified advertising in local newspapers stresses quality construction.

DO 90-131821 TCF

pill-box latterly so much pictured. It will continue to afford full scope to individual preference and, as such, can scarcely lend itself to overnight construction at a fraction of the expense normally involved in home building; yet it seemingly offers the utmost in storm, fire and rust protection at a substantial savings."

Since the Washington market is so thoroughly sold on outside walls of solid brick or stone, the Miller organization decided to lay out its current program to use this customary style of exterior construction plus first and second floors and all bearing partitions of steel. This would give them, Messrs. Miller believed, a rigid, non-

shrinking frame that would prevent settlement cracks and keep door openings square; and furthermore the steel supported concrete first and second floors would interpose two firestops in each house.

They figured that this change in their standard specification would give them increased quality at little extra cost and could be effectively demonstrated to prospective clients for contract building, and to prospective home buyers. They accordingly went ahead with an initial order of steel for 10 houses, four of them to be built on separate wooded sites in "Spring Valley" and five to be used to develop the one side of a new street in "Wester-

MILLER REPUTATION RESTS ON THESE SPECIFICATIONS.

CONCRETE FOOTINGS 12" deep and 6" wider than the wall on each side. Mix 1:2½:5.

CONCRETE CELLAR FLOORS pour 4" thick.

BRICK for basement walls and chimney hard burned arch brick. Mortar of one part portland cement, three parts clean sharp sand, and 10% hydrated lime.

FIRE CLAY flue linings, line entire height of flues. Where a flue is built with an offset, a burlap bag filled with excelsior, and tightly fitting the flue, is inserted below the first offset and drawn up as each few sections of flue lining are installed.

MORTAR for all rubble stone work one part portland cement to 3 parts gravelled sand. Walls laid solid.

A SLATE COURSE laid on top of footings under all rubble stone walls. A second course of slate laid in all rubble walls 6" above surface of the ground. Slate 3/16" thick, full width of walls; joints overlap.

PARGING—The exterior face of basement walls below grade parged as the walls are carried up. Parging applied a full ¾" thick and a mixture of 1 part cement to 1½ parts clean sand. Parging brought to a smooth finish by a wood float.

A HEAVY COAT of asphalt pitch sprayed on the cement parging of all exterior basement walls below grade, and on the interior face of all stone or brick walls which are furred.

STRUCTURAL STEEL for lintels cleaned of all scale, dirt and rust; and given one shop coat. Steel lintels have 6" bearing on walls.

STEEL SASH "Fenwrought" or equal screen casement sash. Casements equipped with wood surrounds of clear heart California redwood. Hinged leaves hung on heavy extension (cleaning) hinges. Glazed with D.S.A. Libby-Owens. Glass bedded in putty and face puttied.

SCREENS for steel sash.

FRAMING—All framing lumber of Long-Bell fir.

ALL LEVELING OF JOISTS, beams or girders on masonry done with slate or similar material, as the use of wood shims or wedges not allowed.

WHEN ATTIC JOISTS run parallel with rafters they are thoroughly spiked to same. When attic joists run at right angles to rafters, 2"x4" tie every 4' from rafter end to purlin studs, spiked to tops of joists and to studs and rafters.

STUDS DOUBLED around all openings on the second floor. Over all openings in wood bearing partitions place two 2"x6" for openings up to 3'; two 2"x8" for openings 3' to 5'. Any wider openings framed as noted on plans.

SHEATHING for all roofs and stud walls ¾" T.&G. N.C. pine; not less than 6" nor more than 8" wide; dressed to a uniform thickness and laid horizontally. Sheathing driven close with joints broken on solid bearing only. All sheathing double nailed at each bearing using 10d nails; one in the blind nailing and one in the face nailing.

TONGUE AND GROOVE sub-flooring of No. 4 N.C. pine laid diagonally at 45 degrees on sleepers of first and second floors. Sub-flooring securely face nailed with two 10d nails at every bearing. Nailing doubled where double headers or double bearings occur. Sub-flooring joints staggered and well distributed, and made over bearings only.

STEEL FRAMING—The first and second floor joists and first floor bearing partitions framed of Stran-Steel. Details constructed in accordance with the Stran-Steel catalog, No. AIA, File No. 13G. The steel joists bridged at intervals of 6' with a metal strip, bridging drawn tight and securely nailed to each joist at top and bottom. Over the joists a channel type metal lath, weighing 4 pounds per square yard, is placed and

securely fastened. Over this lath 2" of 1:2:4 concrete poured. 2x3 bevelled edge Georgia pine sleepers, creosoted, imbedded to a depth of 1".

MILLWORK delivered dry and protected at all times from injury or dampness. Millwork not installed until the plastering is completed and dry.

INTERIOR DOORS 5 cross panel 1-¾" stock doors.

NARROW TRIM for doors one piece, mitred, ¾"x1-¾", or 1-1/16"x2-1/4".

STOOLS AND APRONS provided for all steel sash in one piece unless otherwise detailed. Plaster jambs for steel sash.

DRESSERS stock type or of stock units assembled as per detail elevations on drawings.

MANTELS furnished according to details on drawings.

STAIRS—Main stairs furnished by the mill. 1-1/16" oak treads with 1-1/16" nosing and 9/16"x7/8" scotia, rebated into tread. Risers ¾" oak with treads rebated into same.

DONLEY DAMPERS for fireplaces.

FINISH HARDWARE P. & F. Corbin manufacture. Hardware throughout the first and second floors polished brass unless otherwise noted. Bathrooms chromium plated over brass.

THREE BUTTS furnished for the main entrance. Ball bearing pivot hinges for double acting doors.

CYLINDER ENTRANCE DOOR LOCK for main entrance, and for kitchen doors. All interior doors have Schlage locks.

WATER SERVICE supply from main to house ¾" copper tubing. All pipe and fittings inside house copper tubing.

RISERS to bathrooms not less than ¾" inside diameter.

HEATING—Houses heated by two pipe hot water plant closed system. All risers concealed. Radiators built into walls.

GAS BURNER—Bryant Gas Fired Hot Water Boiler completely equipped with Robertshaw Control, Thermostatic Safety Pilot, Solenoid Valve, Labeled Shut-off, Gas Pressure Regulator, Snap Valve, Drain Cocks, Combined Altitude Gauge and Thermometer.

RIGID CONDUIT used for all wiring in basement. BX cables used for all wiring above basement where approved. BX in all outside walls where required. Conduits and cables kept at least 6" away from all hot water pipes.

NO MORE than ten outlets placed in one circuit.

SWITCHES Toggle Hubbell, or equal.

RECEPTACLES Hubbell bakelite face, or equal, set 12" above finished floor.

Telephone—The rigid conduits and outlet boxes for telephone, wiring the same as specified for electric wiring.

Bells—Push at main entrance and service entrance, and buzzer in dining room.

PLASTER—The plastering on first and second floors applied on Celotex lath on all walls and partitions.

BEDROOM closets plastered.

FINISHED ROOMS in the basements, basement baths, and all basement ceilings plastered on an approved plaster board.

ALL EXTERNAL ANGLES reinforced with galvanized steel corner beads.

ALL INTERIOR ANGLES of walls and ceilings have a strip of black diamond expanded metal lath nailed on lengthwise where solid wood forms base for lath.

PATENT HARD-WALL plaster applied in two coats.

EXTERIOR STUCCO—All frame walls noted as stucco covered with Armco metal lath; self furring.

STUCCO of portland cement and clean sharp sand. Scratch coat of two volumes of clean coarse sand and one volume of portland cement applied; hair or fibre added to this mixture. Scratch coat also applied so as to completely fill the space back of metal lath, forced well into all crevices, covering the outside face of metal lath; and well scratched to provide bond for the succeeding coat.

SECOND COAT composed of three volumes of clean, coarse sand and one volume of portland cement.

COLOR AND TEXTURE of finish coat selected by the superintendent.

SHEET METAL—All gutters and downspouts 16 oz. hard copper. Downspouts square, corrugated; fitted with elbows at head, and turnouts at bottom. Secured to wall with copper fasteners.

ALL FLASHING of 14 oz. copper.

GALVANIZED IRON fireproofing on garage face of door to basement.

ROOFS over the porches of 25 lb. tin, laid flat seam over resin sized paper. Painted on the underside before laying.

ALL WINDOW AND DOOR openings except in basement supplied with bronze screen wire on wood stile.

TILE WORK—The cement base to receive the wall tile applied on Black Diamond lath, 1/8" diamond mesh, 3.4 lbs. per sq. yd.

THE BED for all tile floors laid on a concrete foundation 3" thick, and composed of 1 part cement, 2-½ parts sand and 5 parts coarse aggregate.

ALL BATHS on second floor tile wainscoted to a height of 6'6" around bathtubs and shower stalls. The remainder of the walls have a 6" covered base only.

PAINTING—Where exterior woodwork is painted, it receives three coats of lead and oil in colors selected by the superintendent. The woodwork in basements receives two coats of lead and oil. All other interior woodwork receives three coats of enamel undercoat and one coat of approved enamel.

SLATE ROOF—Main roof and the sides of the dormer covered with slate; standard thickness, over felt weighing 16 lbs. to the square. Copper nails; 14 oz. copper flashing.

FINISHED FLOOR for first and second floor Long-Bell clear plain white oak flooring, 13/16" x2-1/2" face.

BETWEEN FLOOR and sub-flooring heavy building paper laid.

LINOLEUM—Armstrong's A gauge straight line or embossed linoleum laid in kitchen. A layer of deadening felt first cemented to hard pine floor. Linoleum cemented to felt.

INSULATION—Second floor ceiling and all exterior frame walls covered with 4" Rockwool Bats.

GARAGE DOORS—Garage doors of overhead type.

PLUMBING FIXTURES—Basement: two part cement laundry tray.

SERVANTS' BATH—"Standard" Modernus Wash-down Closet; "Standard" 4½' Essex tub complete; "Standard" 17x19" enameled lavatory, Chromard faucets.

KITCHEN—"Standard" 60" enameled cast iron double drainboard cabinet sink.

BATH NO. 1—"Standard" 5½' enameled cast iron Pembroke recess tub, Chromard metal trim combination tub, and shower fitting; "Standard" 22½x18" Companion Vitreous China lavatory complete with Chromard metal lever handle; "Standard" Compact Vitreous China silent action closet combination with Regal white seat and cover.

BATH NO. 2—Same tub as Bath No. 1, except 5'.

leigh." (Pictured on page 35)

These houses are individually designed; each stands on 100 feet of frontage; and each is distinctive in both appearance and workmanship. When photographed for this report, on Sept. 14, three of the five were marked "Sold" and excavations were being made across the street for seven more houses of this same general type to be built this fall. And several of these excavations already carried that cheerful "Sold" sign, proving the sales appeal which these Miller homes enjoy.

Details of the specifications used are given in the accompanying tabulation. Several points here are worthy of study by other builders, since they represent successful practice in meeting such common problems as damp cellars, faulty flues, sagging floors, etc.

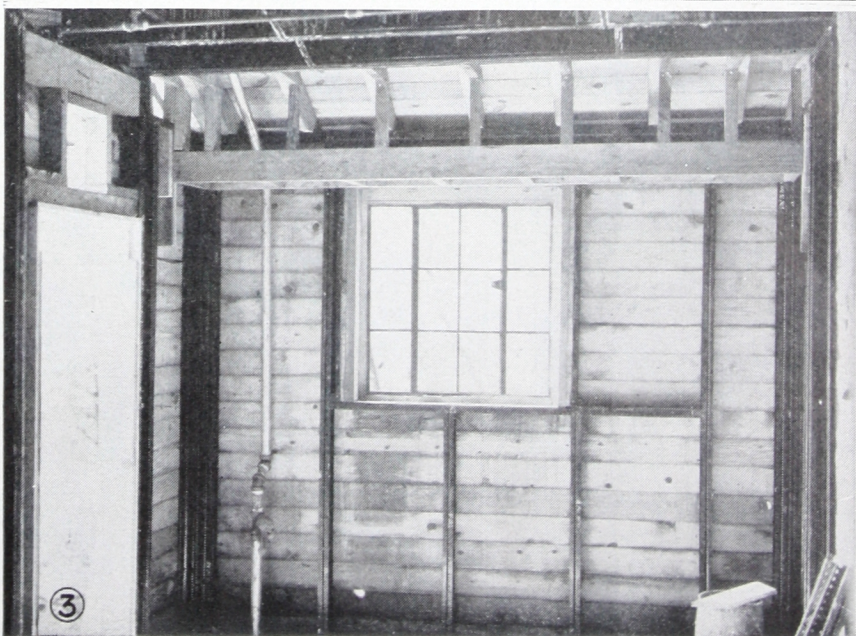
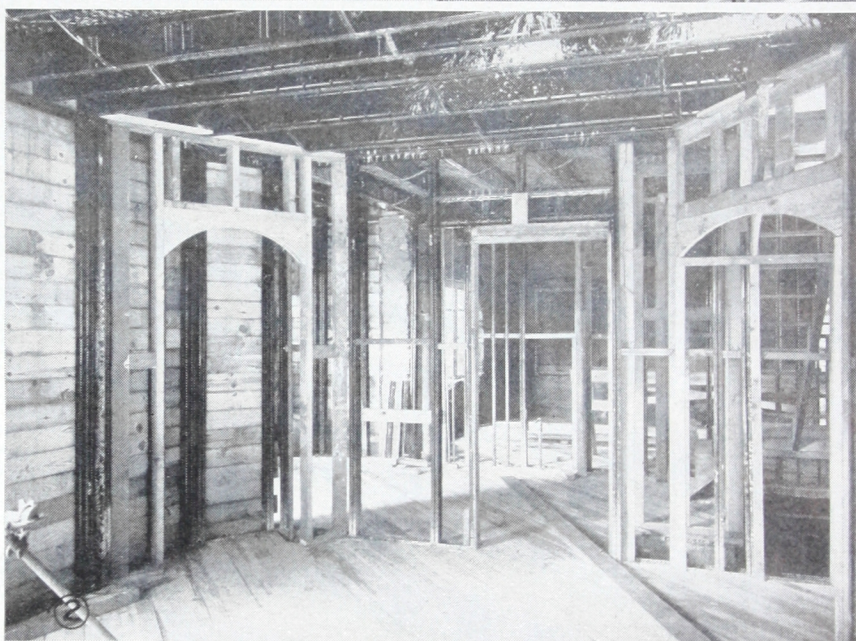
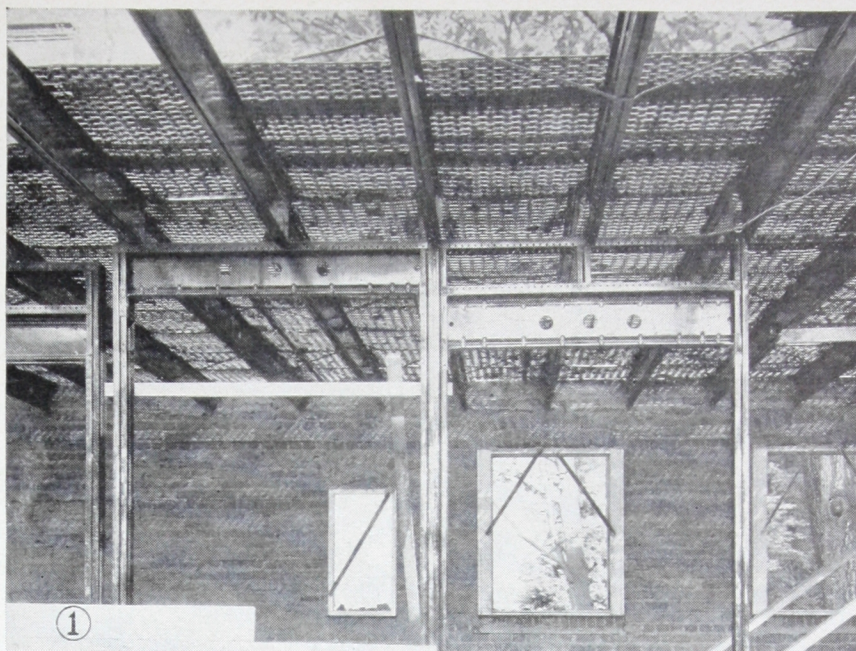
It is the custom of the Miller organization to handle all construction with its own men, sub-letting only the mechanical trades and the masonry. The architectural design of all houses is closely supervised and has to be in keeping with the hundreds of fine properties already erected and landscaped. By having several new houses under construction at all times, prospective clients or purchasers can examine the inner construction used by the Millers; and this was felt to be one of the outstanding advantages of the steel framing of floors and bearing partitions. When demonstrated to prospects, it proved immediately convincing so that sales have been helped and confidence built up.

In describing further their use of this steel framing material which carpenters erect, Mr. W. C. Miller said, "These steel studs and joists, light and readily adjustable to all lengths and purposes, are riveted at the factory, with nailing grooves to which the carpenter can attach flooring, siding, roofing and even wall boards and lathing, using only the customary tools of his trade. Precisely the same methods of carpentry are employed, even to the blue prints. In fact, the inventor of this form of steel framework was a Detroit contracting carpenter.

"The nails, driven between the riveted steel plates, follow set curves and are automatically clinched and locked. Once driven they are there to stay until the house wrecker removes them, and this functionary is in for some rough times.

"While this new material is equally adaptable to the construction of shops, factories and apartments, its use in Washington thus far has been confined to home building. All builders, of course, have long used steel in various forms—in roofing, lathing, trim, window sash and the like, but this is the first general use of steel framework in house construction. We regard it an outstanding advance in the science of home building."

On the following pages are presented photograph and construction drawings of one of the W. C. and A. N. Miller homes built on Upton Street, "Westerleigh," and illustrating the use of steel nailing joists and studs for floors and bearing partitions in connection with solid brick outside walls.



How Miller Brothers of Washington, D. C., are using Stran-Steel for first and second floors and for bearing partitions in houses of brick and stone. 1—A typical straight bearing partition with door openings; 2—Steel carries the load while wood studs frame interior details; 3—Steel supports outside wood wall while 2 by 4's frame ornamental cornice.



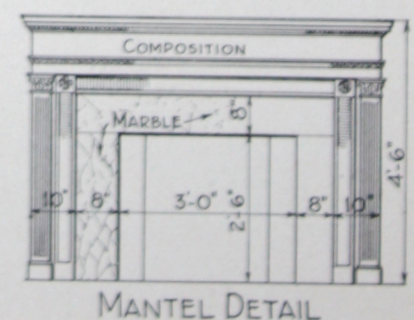
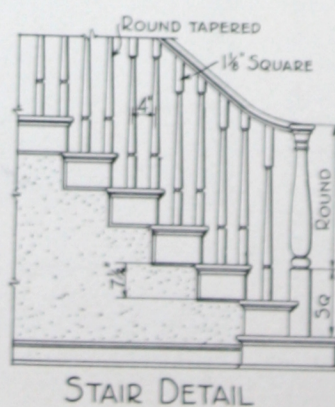
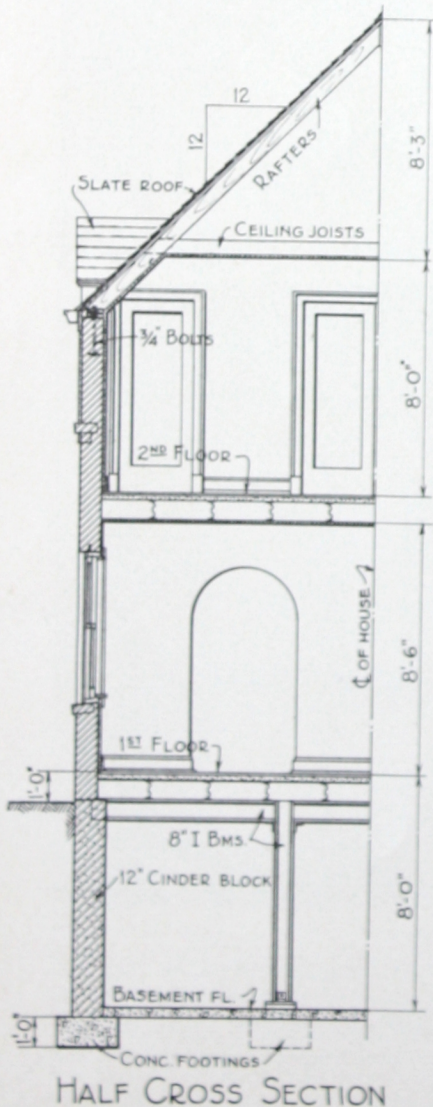
1934 Washington, D. C., Home

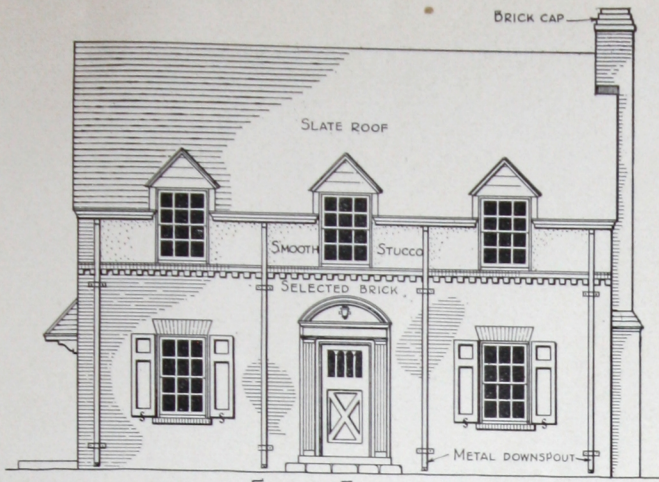
Featuring Steel Framed Floors
and Load Bearing Partitions

Built By W. C. & A. N. MILLER
LOUIS R. MOSS, Architect

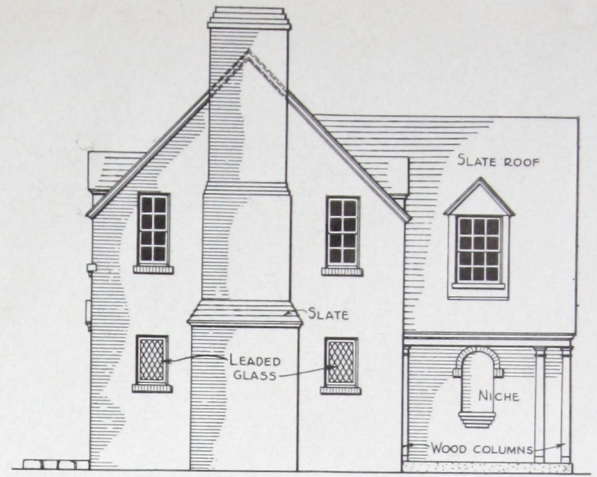
This home design which the Miller organization calls the "Belfast" is marked by charming simplicity of exterior and by cheerful comfort and adequacy inside—a six-room, two-bath house with attached garage. Construction is according to Miller Brothers' new specification which features Stran-Steel framing for floors and bearing partitions in connection with outside walls of solid brick or stone.

Cost Key, 1.772-130-680-30-20-14

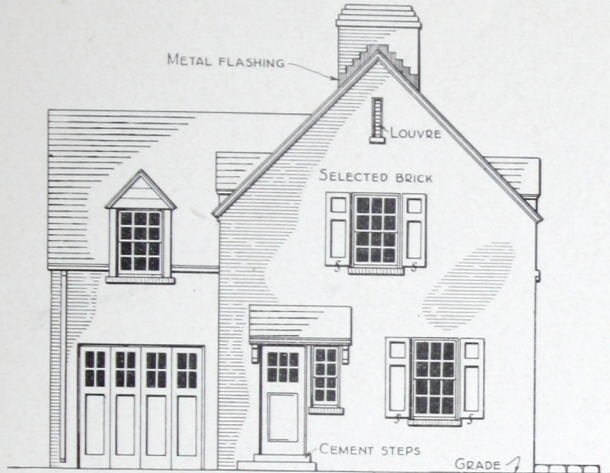




FRONT ELEVATION



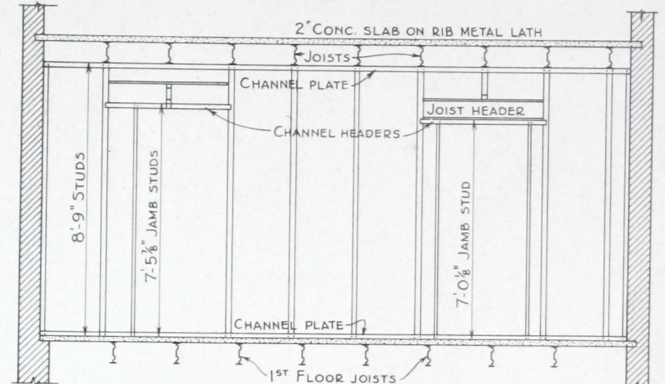
SIDE ELEVATION



SIDE ELEVATION

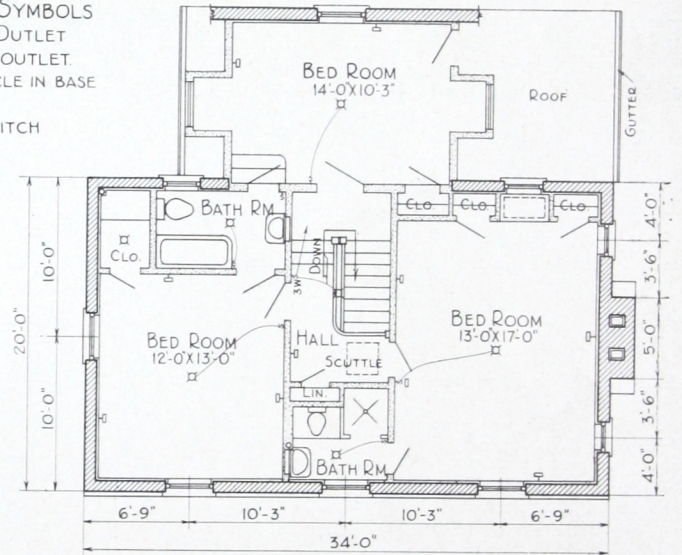


REAR ELEVATION

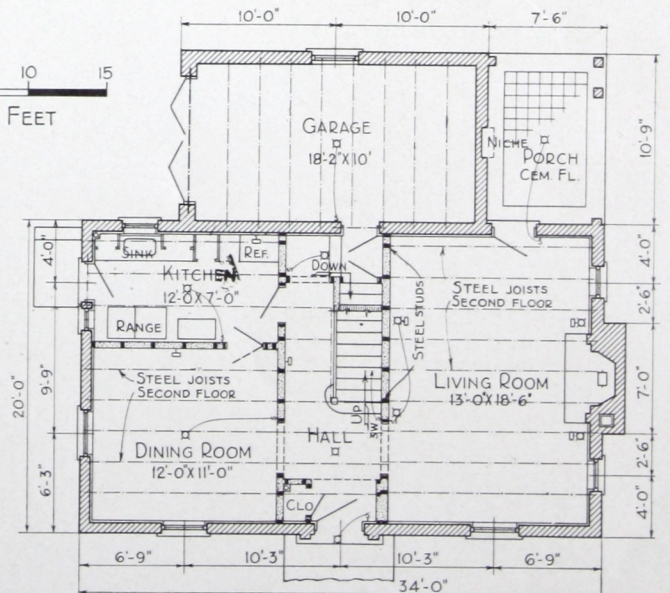
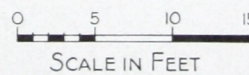


STRUCTURAL ELEVATION OF LEFT WALL OF HALL

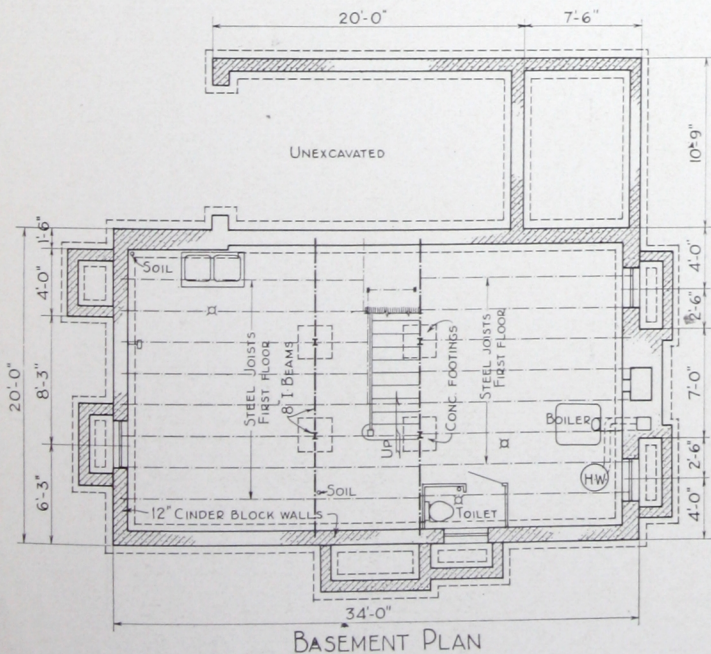
- ELECTRIC SYMBOLS
- CEILING OUTLET
 - ⊞ BRACKET OUTLET
 - ⊞ RECEPTACLE IN BASE
 - ⊞ SWITCH
 - ⊞ 3W 3 WAY SWITCH



SECOND FLOOR PLAN



FIRST FLOOR PLAN



BASEMENT PLAN

